PROCEDEDE.FABRICATION OF A CARD UNDERSTANDING AT LEAST AN ELEMENT ELECTRONIOUE presents It invention concerns a manufacture procedure of a card understanding at least an electronic element. The card obtained by the procedure according to the invention can for example to be used as bank card, as accesses card to a closed space, or again in association with a distributor of merchandises. Such a card also can be used as means of identification or of check. One understands by card all object having a noticeably structure glides defining a general plan and presenting an outline any in this general plan. I1 is known man of the trade a card, understanding electronic, formed elements of a shell in which are foreseen lodgings, destined to receive these electronic elements, etdune layer protective exterior that closes the lodgings. It also is known a card having a symmetrical and formed structure of two similar noticeably shells, each of these two shells having a structured surface serving to form lodgings, destined to receive electronic elements, when the two shells are assembled. The manufacture procedure of this last card generally is the following one - first, every shell is made to the assistance of an injection technique, for example by a casting to hot. - Deuxièmement, the electronic elements are placed in the one of the two shells and the other shell next is put on the first one, the all being assembled by an assembly technique to hot. The manufacture procedure of the card describes here before presents several inconveniences. In particular, after the assembly to hot of the two shells, the electronic elements partially fill only the lodgings. This has for consequence that the card presents, in the places where are situated the lodgings, fragile zones, specially when the electronic elements incorporated in the card have comparatively big dimensions. This is as well as lorsqu'vil is foreseen a winding of a diameter on the order of magnitude of the card, a such proceeded from manufacture generates on the exterior faces of the card of the distorted zones (convex or hollow), this that is naturally harmful for the planéité of the card and for impressions being able to be to have foreseen on the exterior surfaces of this card. One knows again document ep-o 350 179 a manufacture procedure of a solid card to place in a grinds two put to bed exterior and an electronic body, then to inject a material of remplissage under forms liquidates in this grinds. Once hardened, this material of remplissage forms an intermediary layer between the two put to bed exterior. To increase production rapidity, it is foreseen two chains understanding each several demimoules linked to one another. These two chains are likely to have a vertical movement and to form with two half one grind corresponding, belonging respectively to the two chains, a grinds presenting an opening at least on the superior party of the grinds to allow his remplissage. Above the place where the two half one grind corresponding are assembled to form a grinds is foreseen a buse allowing injecting the material of remplissage under forms liquidates in the grinds newly formed. The manufacture procedure of a card describes here before complex east. Of more, for big production debits, this manufacture procedure necessitates an important equipment, this that the render costly. One will note again that the provision of the electronic body and his positionnement at the time of the injection of the material of remplissage not at are all described in the considered document here and are not evident. It some is of even for the provision of the put to bed exterior in the half one grind. The card obtained by the manufacture procedure describes here before and such as described in the document EP-0 350 179 is formed essentially of three put to bed, to know of an intermediary layer and two put to bed exterior. Inside the intermediary layer is foreseen an electronic body formed of electronic elements, of a willing spool on an own support and of an interconnexion support, this interconnexion support serving to link up electrically and rigidly the electronic elements and the spool. An inconvenience of this card originates the fact that the interconnexion support and the clean support to the spool increase the thickness of the card. Thus, it is difficult to obtain a thin card having a thickness of 0.76 mm prescribed by the norm ISO often used for the bank cards. One will notice in addition that the manufacture procedure proposed for this card does not assure that the interconnexion support and the exterior layer neighbor are separated by a layer of the material of remplissage, this that is harmful for the good adherence of this exterior layer to the intermediary layer. Of more, this manufacture procedure does not guarantee a good positionnement of the electronic body within the

intermediary layer. The presents invention has for goal to compensate for the described inconveniences here before while proposing a manufacture procedure of a card allowing producing cards in big quantity for an inexpensive cost and to obtain from full cards without exterior contact. The presents invention concerns therefore a procedure of which a first method of implement is characterized in this that it includes a first group of steps behaving the following steps B) provision, on a work surface, of at least an electronic element C) provision, on ladite surface work, of a porous structure or understanding a relief of which the hollow one are communicating, this structure being constituted of aof positionnement, and placement of this manner structure that the aforementioned element electronic is situated inside ladite zone of positionnement; this first group of steps being second suividun groups steps behaving the following steps F) energy provision serving to melt at least partially ladite structures G) application of a pressure on ladite structures heading for ladite surface work of such manner that the aforementioned oneA mass in which is drowned the aforementioned element electronic; this second group of steps being followed by a step of solidification of ladite mass. One will note that by porous structure, one understands a structure to open pores, c'est-à-dire communicating between them. It results from the mentioned characteristics here before a procedure consisting of of the simple steps and allowing making a big number of cards simultanément for a weak price. Of more, the first method of implement procedure according to the invention guarantees a determined positionnement of the electronic element inside the made card and allows a discharge del'air residual at the time of ladite step G. Thanks to these advantages, it is possible to bring, on the work surface, a structure of which the dimensions in projection on this work surface correspond to a body of several cards. In these cases, it is foreseen a number of zones of positionnement corresponding to the number of made cards simultanément and at least an electronic element is brought in each of these zones of positionnement. The steps F and G carry out themselves then simultanément for the body of the made cards and after solidification, a cut step of every card is foreseen. This cut step is carried out manner that the cut outline of every card never intercepts the zone of positionnement of this card. The described advantages here before result equally of another method of 'implemented manufacture procedure of a card according to the invention. According to this method of implement, the procedure according to the invention is characterized in this that it includes a first group of steps behaving the following steps B) provision, on a work surface, of at least an electronic element; C) provision, on ladite surface work, of a structure, reducible and formed of a material fuse, of manner that the aforementioned element electronic is superimposed to this structure andthis first group of steps being followed by a second group of steps behaving the étapessuivantes E) applicationdune pressure on the aforementioned element electronic of manner that the latter penetrates at least partially in ladite structures; F) energy provision serving to melt at least partially ladite structures; G) application of a pressure on ladite structures heading for ladite surface work of such manner that the aforementioned material fuseln which is drowned the aforementioned element electronic; this second group of steps being followed by a step of solidification of ladite mass. By reducible structure, one understands a structure presenting a resistance to the sufficiently weak compression in order not to damage the electronic element, or of other foreseen elements in the card, at the time of the steps E and mentioned G here before. According to a varying the one or the other of the two methods of implement described here before, it is foreseen to bring in addition on the work surface at least an exterior layer. In the case where two put to bed exterior are foreseen, the latter are placed party and of other of the structure. The steps F and G serve equally to do to adhere these two put to bed exterior to the mass formed by the melted structure once this solidified mass. One will note that when no exterior layer is not foreseen, the non adhesive work surface to the material fuse melted structure. According to a special characteristic of the first method of implement procedure according to the invention describes here before, the zone of positionnement is defined by a principal opening foreseen in the structure. This principal opening is preferably crossing, this that allows obtaining this opening principal by a simple cutting of the structure. According to a varying preferred first method of implement, the procedure

is characterized in this that ladite structures, once brought. presents, in a parallel noticeably plan to ladite surface work, a relief of which the extreme points define noticeably a parallel plan to ladite surface work. In particular, the relief is composed by a body of pyramides. It results from this special characteristic at least three advantages. First, at the time of the merger and remplissage of the zone of positionnement in which is situated the electronic element, the structure assures which situated air initially in this zone of positionnement can easily be evacuated laterally. Deuxièmement, in the case where an exterior layer is brought on the structure before the steps F and G, the structure defines a maintenance plan of this exterior noticeably parallel layer to the plan defined by the work surface. One will notice that if the energy provision and the application of the pressure at the time of the steps F and G of the procedure are homogenous, the exterior layer placed on the structure descends heading for the work surface while remaining noticeably parallel to this one. Thus, the structure avoids that the superior exterior layer and, if need be, the exterior inferior layer retract or ripple. Of more, she avoids than the superior exterior layer form a bell including the electronic element, this that would be harmful for the planéité of the obtained card and for his fiabilité. Troisièmement, the structure guarantees the positionnement of the electronic element all to alongside the manufacture procedure and therefore a determined position of this electronic element and of all other foreseen element in the card obtained by the procedure according to the invention, well that the structure finally is transformed in a full mass danslaquelle are drowned the various foreseen elements. The same advantages are obtained by a structure alvéolée or formed by an expanded material as a foams. Finally, the procedure of the invention, according to a third method of implement, is characterized in this that it includes a first group of steps behaving the following steps B) provision, on a work surface, of at least an electronic element; C) provision, on ladite surface work, of two put to bed, formed each of a reducible material and thermo-durcissable, of manner that the aforementioned element electronic is situated enters. This first group of steps being followed by a second group of steps behaving the following steps E) application of a pressure on the two put to bed manner that the aforementioned element electronic penetrates in these two put to bed; H) energy provision serving to harden the aforementioned material reducible and thermo-durcissable of the two put to bed manner that this last form a solid mass containing the aforementioned element electronic. Of characteristic others and advantages of the presents invention will equally be described to the assistance of the following description, done in reference to the annexed drawings given by way of non restrictive examples and in which these - the figure 1 and 2 representatives schématiquement a first one and a second one varying of a first method of implement procedure according to the invention; - the figure 3 and 4 representatives schématiquement aSecond method of implement procedure according to invention; - the figure 5, 6 and 7 representatives respectively in cuts first one, second and third cards obtained by the manufacture procedure of a card selon1 ' invention; - the figure 8 representative schématiquement a third method of implement manufacture procedure of a card according to the invention. One will note that, in the various methods of implement procedure of fabricationdune card according to the represented inventions to the figure 1, 2, 3, 4 and 8, the various elements intervening are represented schématiquement in cuts. In each of these faces, the cutting plan chosen corresponds to a perpendicular plan to the general plan of the card obtained by the procedure selon1 ' invention. While referring itself to the figure 1, 5, 6 and 7, one will describe hereafter a first method of implement manufacture procedure of a card according to the invention, as well as different varying cards obtained by this first method of implement procedure according to the invention. On the figure 1 'is represented schématiquement a first method of implement manufacture procedure of a card according to the invention. According to this first method of implement, it is foreseen to bring, on a work surface 2 defining a plan 4, a support 6. This support 6 is formed of a basis 8 defining a first exterior layer and of a structure 10, constituted of a material fuse and defining a zone of positionnement 12. An electronic element 14 and a spool 16, linked up directly to this electronic element 14, next are brought and placed in the zone of positionnement 12. Next, an exterior layer 18 is brought

and placed on the structure 10. The structure 10 is formed by a body of pyramides 20 of which the summits 22 define noticeably a plan 24 parallels to the plan 4. This body of pyramides 20 form a relief of which the hollow one are communicating. The zone of positionnement 12 are understood between the plan 26 defined one by the superior surface 28 of the basis 8 and the plan 24. The zone of positionnement 12 in which are placed the electronic element 14 and the spool 16 is arranged manner that this electronic element 14 and this spool 16 are confined in the zone of positionnement 12 once the exterior layer 18 was brought on the structure 10. Therefore, the electronic element 14 and the spool 16 are positioned inside the structure 10. One will note here that the basis 8 and the structure 10 forms a support 6 in an alone piece. Nevertheless, it is possible to foresee that the material fuse constituent structures it 10 be different of the constituent material bases it 8. After the provision of the exterior layer 18, it is foreseen the provision of a press (simplified by two arrows) serving to maintain the exterior layer 18 in support against the summits 22 of the pyramides 20 form the structure 10. Next, it is foreseen an energy provision serving to melt at least partially structures it 10. Simultaneously, a pressure is applied on the exterior layer 18 and consequently on the structure 10. Thus, when the pyramides 20 are founded progressively under the energy provision, the exterior layer 18 descendant progressively heading for the basis 8. One will note here that the descent of the exterior layer 18 heading for the basis 8 carries out themselves, thanks to the structure 10 foreseen one, of such manner that the exterior layer 18 remainder constantly, during this descent, parallel noticeably to the plan 26 defined one by the basis 8. Therefore, the étalement of the material fuse melted in the plan 26 peuts'effèctuer in a homogenous way. Of more, l' situated air in the intermediary region between the exterior layer 18 and the basis 8 can évacuate themselves laterally all to alongside the descent of the layer 18 heading for the basis 8. One will notice also as the application of a pressure on the exterior layer 18 permit, jointly with the structure 10 foreseen one, to prevent as the exterior layer 18 retracts or ripples under the effect of the heat, this that is very advantageous for the achievement of a card glides not presenting no surface irregularity, or bending. Thus, the structure 10 assures at least three essential functions in this first method of implement procedure according to the invention. The first function is the maintenance of the exterior layer 18 in a parallel noticeably plan to the plan 26 defined one by the basis 8 all to alongside the provision step of energy serving to melt at least partially structures it 10. The second function of the structure 10 consist in to allow the lateral discharge of the air being located in the intermediary region between the base10 and the exterior layer 18 all to alongside the step during which it exterior layer 18 brought down heading for the basis 8 under the effect of the application of a pressure. The third function of the structure 10 consist in to assure the positionnement of the electronic element 14 and spool 16 all to alongside the manufacture procedure of a card according to the invention. As soon as the material fuse of the structure 10, at least partially melted, fills left toutlgespace free by the electronic element 14 and the spool 16 between the basis 8 and the exterior layer 18, this electronic element 14 and this spool 16 completely are drowned in the material fuse of the structure 10 bottom, which forms then a compact mass containing the electronic element 14 and the spool 16. Thus, the structure 10 initially formed one of pyramides 20 form, after the provision steps of energy and of application of a pressure on the exterior layer 18, a mass defining an intermediary layer between the basis 8 and the exterior layer 18. Finally, a step of solidification of this mass is foreseen and the press serving to the application of a pressure is withdrawn. The material fuse constituent structures it 10 can be, for example, a resin or a plastic material, these examples being at all restrictive. For this that concerns the constituent materials bases it 8 and the exterior layer 18, it is possible to consider at least three different cases in relation with the material fuse constituent structures it 10 initially brought one. In a first case, the constituent material bases it 8 and the constituent material it exterior layer 18 are noticeably the same as the material fuse of the structure 10. In this case, the card obtained by this first method of implement procedure according to the invention is represented schématiquement to the figure 5. On this figure 5, the card 30 is constituted by a homogenous mass 32 constituted one by a solidified resin or a plastic material, this

mass 32 including the electronic element 14 and the spool 16. In a second case, the constituent material bases it 8 noticeably east the same as the material fuse constituent structures it 10, while the exterior layer 18 is constituted by another material having a merger temperature superior to the one of the material fuse of the structure 10. In this case, the card obtained by the first method of implement procedure according to the invention is represented schématiquement to the figure 7. On this figure 7 is represented a card 36 form by a first layer 38 and an exterior layer 18. The electronic element 14 and the spool 16 are drowned in the layer 38, which is formed by the constituent material the support 6 initially brought one on the work surface 2. In this case, it is foreseen that the constituent material it exterior layer 18 and the material fuse constituent puts to bed it 38 present ones the characteristic to secure itself solidly together at the time of the step of solidification of the procedure according to the invention. The card 36 form thus an all compact one including the electronic element 14 and the spool 16 in an internal noticeably corresponding zone to the zone of positionnement defined by the structure 10. The latter does can be particularly advantageous for certain applications of the card obtained by the procedure according to the invention in which ones the location of the spool within the card is necessary. Next, if a cut step final of the outline of the card is foreseen, it is possible to carry out this cut of such manner that the foreseen outline never intercepts the zone corresponding to the zone of initial positionnement of the electronic element 14 and spool 16. Thus, this cut step does not present no endommagement risk of the electronic element 14 or spool 16. This guarantees that this cut step does not generate any production losses. Of more, the spool 16 and the electronic element 14 completely are included in the card 36 according to the invention. In a third case, the material fuse constituent structures it 10 different east of the constituent material bases it 8 and constituent material it exterior layer 18, the latter material having a merger temperature superior to the one of the material fuse of the structure 10. In these cases, the card obtained by the first method of implement procedure according to the invention is represented schématiquement to the figure 6. On this figure 6, the card 40 understands a first exterior layer 44 and a second exterior layer 18. The card 40 understands, between the first one and second put to bed exterior 44 and 18, an intermediary layer 42 form a mass, constituted material fuse of the structure 10, in which are drowned the electronic element 14 and the spool 16. Again, the material fuse forming the mass 42 of the intermediary layer and the material forming the basis 8 and the exterior layer 18 are selected of such manner that this basis 8 and this exterior layer 18 adhere solidly to the mass 42 after solidification of this last one at the time of the manufacture procedure of this card according to the invention. In particular, the constituent material the mass 42 of the intermediary layer a resin solidified or a plastic material, these examples being at all restrictive. While referring itself to the figure 2, one will describe hereafter a varying first method of implement manufacture procedure of a card according to the invention. According to this varying, it is foreseen to bring on a work surface 2 defining a plan 4 a first exterior layer 44. Next, a structure 46 is brought and placed on the exterior layer 44. The structure 46 present one a principal opening 48 defining a zone of positionnement 13. At least an electronic element 50 next is brought on the work surface 2 and placed inside the zone of positionnement 13. One will note here that the structure 46 also can be brought posterior to the provision of the electronic element 50. Next, an exterior layer 18 is brought and disposeed on the structure 46 of such manner that the principal opening 48 is equally covered by this exterior layer 18. The structure 46 east a porous structure constituted by a material fuse. By way of example, this structure 46 is formed by an expanded material as a foams or by a structure alvéolée. The structure 46 defines a superior plan 24 noticeably parallels to the plan 26 defined one by the superior face 52 of the exterior layer 44. In a similar way to the first one varying described here before, a press is brought on the exterior layer 18 of such manner that this exterior layer 18 is maintained in support against the structure 46 in the plan 24 defined one by this last one. Once the various aforementioned elements apportés1 an energy provision is foreseen to melt at least partially structures it 46. Simultaneously, a pressure is applied to ugly of the press on the exterior layer 18 and consequently on the structure 46. Therefore, the

material fuse constituent structures it 46 in merger sheds itself in the principal opening 48 of manner to coat the electronic element 50. In order to preserve the mentioned advantages of the structure 10 representatives to the figure 1, it is foreseen that the structure 46 defines, between his superior plan 24 and the plan 26 of the exterior layer 44 on which she is put, a superior volume to the material volume fuse the constituent one. This characteristic is obtained by the quoted examples here before, to know by an expanded material and a structure alvéolée. Therefore, at the time of the merger of the structure 46, the material fuse constituent this last one can shed itself in the zone of positionnement 13 without generating surpression, the air filling initially this zone of positionnement 13 being able to evacuate themselves laterally through structures it 46. The structure 46 is melted of such manner that she forms finally a mass 42 defining an intermediary layer of the obtained card, as that is represented to the figure 6. Again, the materials choose for the put to bed exterior 18 and 44 are compatible with the material fuse constituent structures it 46 of such manner that these materials solidly secure themselves to one another after the step of solidification of the mass 42 resultant one of the merger of the structure 46. According to two different cases of this varying method of implement procedure according to the invention, the materials fuses constituent put to bed them exterior 18 and 44 can be different or the same as the materials fuses constituent structures it 46. One will notice again that the structure 46 such as represented one on the figure 2 form a separated piece initially of the exterior layer 44. Nevertheless, it is possible so to foresee a previous assembly of the exterior layer 44 with the structure 46. While referring itself to the figure 3 and to the figure 5 to 7 already described ones, one will describe hereafter a second method of implement manufacture procedure of a card selon1' invention. According to this second method of implement, it is foreseen to bring, on the work surface 2, a structure 56. In a first one varying, it is foreseen to bring equally an exterior layer 44 assembly previously with the structure 56. In a second one varying, the exterior layer 44 is omitted. In contrast to the first method of implement describes here before, the structure 56 not present any zone of initial positionnement for the electronic element 14 and the spool 16. The latter are brought on the structure 56 and willing on his superior face 58. An exterior layer 18 next is brought on the electronic element 14 and the spool 16 of manner that this exterior layer 18 is superimposed to the structure 56. Next, a press (simplified by two arrows) is brought on the exterior layer 18 of manner to maintain this last one in support against the spool 16 and the electronic element 14. The structure 56 east a porous formed structure for example by an expanded material or by a structure alvéolée. In particular, the structure 56 is formed by a foams reducible. In a first case, it is foreseen, after the aforementioned steps, to bring first energy in the form of a heat serving to soften the structure 56, then to exercise a pressure on the electronic element 14 and the spool 16 of such manner that the latter penetrate in the structure 56 while forming, in an internal zone of this last one, them own lodging. Next, the energy provision in the form of a heat serves to melt at least partially structures it 56 and a pressure is applied on this last one of manner to form a compact mass in which are drowned the electronic element 14 and the spool 16. In a second case, the structure 56 present one the characteristic to be sufficiently reducible to ambient temperature to allow the penetration of the electronic element 14 and spool 16 in this structure 56, under the effect of the application of a pressure on the exterior layer 18 and consequently on the electronic element 14 and the spool 16, without damaging the latter. Once the electronic element 14 and the spool 16 having formed them own lodging in the structure 56 by crushing or by compression, an energy provision serving to melt at least partially structures it 56 is foreseen. Alongside this energy provision, a pressure is applied on the structure 56 of such manner that this last form, after merger, a mass in which are drowned the electronic element 14 and the spool 16. This second case is particularly advantageous being given that the energy provision serving to melt at least partially structures it 56 is brought only once the exterior layer 18 is maintained, to the assistance of the applied pressure on this last one, in support against the structure 56. Therefore, the procedure, according to this varying preferred second method of implement, guarantees, as in the first method of implement describes here before, that the

exterior layer 18 does not retract or does not distort itself under the effect of the brought heat. Once the mass formed by the material fuse of the structure 56 solidified one, it results a such as described card to the figure 5, to the figure 6 or to the following figure 7 that the exterior layer 44 was foreseen or no and following the materials choose for the exterior layer 18, the structure 56 and the exterior layer 44, if need be. While referring itself hereafter to the figure 4 and to the already described figure 5, one will describe another varying second method of implement procedure according to the invention. According to this varying, it is foreseen to bring a structure 60 form in a similar way to the structure 56 representative to the figure 3, but behaving a first party 62 and a left second 64. The first party 62 first is brought on the work surface 2, then the electronic element 14 and the spool 16 are brought on this first party 62. Next, the left second 64 of the structure 60 is brought on the electronic element 14 and the spool 16. To ugly of a press, a pressure is applied on the left second 64 of the structure 60 of such manner that the electronic element 14 and the spool 16 penetrate in the structure 60, the first party 62 and the left second 64 of this structure 60 then being brought in support against each other. The presents varying second method of implement guarantees that the mass, resultant of the merger of the structure 60, englobeentlèrement the electronic element 14 and the spool 16 and forms a compact mass. After a step of solidification, it results from this varying a card 30 such as represented one to the figure 5. One will describe hereafter a third method of implement procedure according to the invention while referring itself to the figure 8. According to this third method of implement procedure according to the invention, it is foreseen to bring on the work surface 2 a first solid layer 68 and a second layer solid 70. An electronic element 14 and a spool 16 are equally brought and disposeed between the first solid layer 68 and the second layer solid 70. The two put to bed solid are constituted by a reducible material thermo-durcissable. By way of example, this material is rubber. To the assistance of a press (simplified by two arrows), a pressure is exercised on the put to bed 68 and 70 of such manner that the electronic element 14 and the spool 16 penetrate in these put to bed 68 and 70, the latter coming in support against each other. Ensuite1 an energy provision in the form of a heat is brought to the two put to bed 68 and 70 and the latter harden themselves. In order to assure a good adherence of the first layer 68 with the second puts to bed 70, the material thermo-durcissable and the quantity of brought energy are chosen of such manner that, under the effect of the energy provision and application of a pressure, the internal respective faces 72 and 74 of the two put to bed 68 and 70 adhere solidly moon to the other. After cooling, it results a compact card in which are included the electronic element 14 and the spool 16. In a varying of this third method of implement, it is equally possible to foresee the provision of an or two layer (couche(s)). Finally, one will notice that each of the methods of implement described here before particularly well adapted to make simultanément on the same work surface several cards. For this to do, it is foreseen to bring the mentioned structures and the put to bed exterior mentioned in the form of a leaf or of veneers of which the dimensions correspond, in projection on the work surface, to the one of several cards disposéeslune next to the other. In this simultaneous manufacture of several cards, it is foreseen a final step of every card cut, the cut outline of every card being carried out manner that this one never intercepts a zone of positionnement or an internal zone in which is located the various foreseen elements and notably a spool